an input port disposed to couple an optical signal to

a first output port when the mirror is in the first position and to couple the optical signal to

a second output port when the mirror is in the second position wherein the mirror is formed on a smoothed major crystal plane of a layer of single-crystal silicon and has a reflectivity greater than 96%.

3. The optical switch of claim 1 wherein the input port provides the optical signal to the mirror in the second position at an angle of between about 15-45 degrees from a normal of the mirror.

5. The optical switch of claim 1 wherein the mirror has a first mirrored surface and a second mirrored surface, the second mirrored surface being opposite the first mirrored surface, and further comprising

a second input port disposed to optically couple a second optical signal to the first output port when the mirror is in the second position.

9. A micro-electro-mechanical system ("MEMs") optical cross connect comprising:

a mounting substrate having a mounting surface;

a first MEMs optical switch cell affixed to the mounting surface on an edge of the first MEMs optical switch cell and aligned to direct a first optical beam propagating along a beam path from a first optical input to a first optical output when a first metallic mirror of the first MEMs optical switch cell is in the beam path; and

a second MEMs optical switch cell affixed to the mounting surface and aligned to direct the first optical beam from the first optical input to a second optical output when a second metallic mirror of the second MEMs optical switch cell is in the beam path and the first optical switching element is rotated in a plane essentially normal to the mounting surface out of the beam path wherein at least one of the first metallic mirror and the second metallic mirror has a minimum face dimension greater than about 400 microns.

14. A micro-electro-mechanical system ("MEMs") optical cross connect comprising:

a mounting substrate having a mounting surface;

a first MEMs optical switch cell affixed to the mounting surface on an edge of the first MEMs optical switch cell and aligned to direct a first optical beam propagating along a beam path from a first optical input to a first optical output when a first optical switching element of the first MEMs optical switch cell is in the beam path; and

a second MEMs optical switch cell affixed to the mounting surface and aligned to direct the first optical beam from the first optical input to a second optical output when a second optical switching element of the second MEMs optical switch cell is in the beam path and the first optical switching element is rotated in a plane essentially normal to the mounting surface out of the beam path

wherein the first optical switching element is a two-sided mirror having a first mirrored side and a second mirrored side, the first optical beam reflecting off the first mirrored side of the two-sided mirror when the two-sided mirror is in the beam path and further comprising

a second optical input disposed to provide a second optical beam to the second mirrored side of the two-sided mirror when the two-sided mirror is in the beam path, the second optical beam being reflected off the second mirrored side to

a third optical output wherein the first optical beam optically couples to the third optical output when the first optical element and the second optical element are both switched out of the beam path

wherein the first mirrored side has a reflectivity greater than 96% and the second mirrored side has a reflectivity greater than 96%, each of the first mirrored side and the second mirrored side being formed on a smoothed major crystal plane of a layer of single-crystal silicon.

15. A micro-electro-mechanical system ("MEMs") optical cross connect comprising:

a mounting substrate having a mounting surface;

a first MEMs optical switch cell affixed to the mounting surface on an edge of the first MEMs optical switch cell and aligned to direct a first optical beam propagating along a beam path from a first optical input to a first optical output when a first optical switching element of the first MEMs optical switch cell is in the beam path; and

a second MEMs optical switch cell affixed to the mounting surface and aligned to direct the first optical beam from the first optical input to a second optical output when a second optical switching element of the second MEMs optical switch cell is in the beam path and the first optical switching element is rotated in a plane essentially normal to the mounting surface out of the beam path wherein the first optical input is disposed between 12-57 mm from the first optical output.

19. A micro-electro-mechanical system ("MEMs") optical cross connect comprising:

a mounting substrate having a mounting surface;

a first latching MEMs optical switch cell affixed to the mounting surface and aligned to direct a first optical beam from a first optical input to a first optical output when a first mirror of the first MEMs optical switch cell is latched in an extended position; and

a second MEMs optical switch cell affixed to the mounting surface and aligned to direct the first optical beam from the first optical input to a second optical output when a second mirror of the second MEMs optical switch cell is latched in a second extended position and the first mirror is rotated in a plane essentially normal to the mounting surface out of the beam path to latch in a retracted position wherein the first mirror in the extended position extends above an edge of the first latching MEMS optical switch cell at least 400 microns.

23. An optical cross connect comprising:

N optical input ports where N is a first integer;

M optical output ports where M is a second integer; and

N times M micro-electro-mechanical system optical switch dice, each of the micro-electro-mechanical system optical switch dice having a magnetic drive capable of switching a mirror from a first position to a second position in response